



ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

Ron Fuller, Chief Electrical Inspector

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● Adoption of 2005 NEC And WAC 296-46B On Schedule For June 30, 2005

The public hearings on the current WAC revisions were held in Tumwater and Yakima during the first week of April. The department received only positive comments on the rules. **The adoption date for the revised WAC 296-46B is June 30, 2005. The 2005 version of the National Electrical Code (NEC) is adopted in the rule package and will be effective on the same date.** The complete version of the new WAC 296-46B, showing the deletions and insertions, is available on the Labor and Industries website at:

<http://www.lni.wa.gov/tradeslicensing/electrical/whatsnew/ruledev/>

● IMPORTANT CORRECTIONS – Department Code Update Training Courses

Midway through the recent training sessions (8-hour, NEC Update - Chapters 1-4), we were made aware of errors or omissions in the training presentation on two specific changes in the 2005 NEC. When the errors were found, the remaining classes were given correct information. To ensure everyone gets it right, please take note of the following two corrected items:

240.20(B) Circuit Breaker As Overcurrent Device. The addition of new wording in the general rule makes it clear that both manual and automatic operation of circuit breakers are required to open all ungrounded conductors of the circuits they protect. We trained per NEC 240.20(B)1 that handle ties can only be used with single-pole breakers on multiwire circuits when line-to-neutral loads are served and two devices are mounted on the same yoke. **However, NEC 240.20(B)(2) still allows the use of individual single-pole circuit breakers with handle ties for line-to-line loads on single-phase circuits or 3-wire, direct current circuits, and NEC 240.20(B)(3) still allows specific conditions for such use on 3-phase and 2-phase circuits.**

430-Motors, Part IX Disconnecting Means, 430.102 Location. We trained that the text in 430.102(B) was modified to correct misinterpretation of changes in the 2002 NEC. The controller disconnecting means required in 430.102(A) may serve as the motor disconnecting means required in 430.102(B) if it is "in sight" of the motor location. **We stated that this was a return to the 1999 NEC requirements prior to the 2002 NEC changes in 430.102(B), and that is not a correct statement.** In both the 2002 NEC and 2005 NEC there must be a disconnecting means for a motor located in sight from the motor location and driven machinery location, unless the specific conditions of the Exception, parts (a) or (b), are met. The 2005 NEC modified text clarifies that the controller disconnect may also serve as the required motor disconnect if it happens to be "in sight" from the motor and driven machinery locations.

● More Applicants Needed For The Technical Advisory Committee

The technical advisory committee (TAC) consists of industry representatives who volunteer to review and make recommendations on proposed changes for the 2006-2007 Electrical Rules (Chapter 296-46B WAC). We still need applicants in a few positions. The committee needs more 01-journeyman electricians, a 06-limited energy electrician and contractor, a 06A-HVAC contractor, a 02-residential contractor, and a plumbing contractor and plumber. TAC members will spend a full day September 20, 2005 to meet as a group and make recommendations on revision proposals. Submitted material will be E-mailed to all members August 1, 2005 and must be reviewed prior to the September 20th meeting in Tumwater. An additional meeting may be scheduled if the TAC finds it necessary.

Persons interested in becoming TAC members must submit a letter of interest to the Chief Electrical Inspector, P.O. Box 44460, Olympia, WA, 98504-4460 to be received no later than July 1, 2005. The letter should show constituency and support for the prospective member. All applications will be evaluated to determine if the applicant meets the requirements of the position.

● Annual WAC Rule Revisions Reopen Soon – Proposals Must Be Submitted In July

Much like the NEC development process, the electrical rules open for revision proposals right after the current version is adopted. The annual revision cycle opens July 1, 2005 and we will only accept

proposals for 15 days. All proposals must be made electronically using the form supplied by the department. All proposals must clearly identify original language as "new text." Proposed revisions should include the relevant text and should use the legislative format (i.e. Use underscore (or underlining) to denote wording to be inserted (e.g. inserted wording) and strike-through to denote wording to be deleted (e.g. ~~deleted wording~~)). **Revision proposals for the next cycle will be accepted only from July 1, 2005 through July 15, 2005.** Proposals will not be accepted before or after these dates. The form for proposals will be available on the Labor and Industries website June 20, 2005 at:

www.lni.wa.gov/TradesLicensing/Electrical

● Telecommunications Conductors And Cables Installed In Wet Locations

The NEC defines the interior of an underground raceway as a wet location and requires all insulated conductors and cables used in wet locations to be of a type listed for such use. Listed wet location conductors and cables used for lighting and power, limited energy (NEC Article 725), and fire alarm systems (NEC Article 760) have been widely available for many years and must be used in underground raceway systems. Today there are few communications cables listed for use in wet locations. Those available are typically designed for direct burial, expensive, and may not have the performance characteristics needed for a specific telecommunications application.

In many areas of the country the telecommunications industry is unregulated, and the work is not inspected to any installation standard. Until more jurisdictions regulate telecommunications work, the cable manufacturing industry has little incentive to formally submit their telecommunications products to testing laboratories to be evaluated for use in wet locations. The industry has a long history of successful operation of telecommunications systems using existing unlisted cables in underground raceways. Until a wider range of communications cables listed for use in wet locations is available in the marketplace, the department will not require such listing and marking on communications cables used for telecommunications circuits installed in underground raceways.

● Preview 2005 NEC Code Changes – 110.26 Spaces About Electrical Equipment

There is a significant change involving working clearances about large equipment in the 2005 NEC. Failure to recognize the new requirement can possibly affect the building electrical equipment room structural access and egress plans and result in major costs to the electrical or general contractor.

For many years the entrance to working space requirements for "large equipment" (e.g. twice the depth of working space, panic hardware on doors opening in the direction of exit, unobstructed exit travel, or doors at each end of the equipment space) has been based on equipment rated 1200 amperes or more and over 1.8 m (6 ft.) wide. **The additional parameter of "over 1.8 m (6 ft.) wide" has been removed. The "large equipment" working space requirements now apply to all equipment rated 1200 amperes or more that contains overcurrent devices, switching devices or control devices.**

● Preview 2005 NEC Code Changes – 408.4 Circuit Directory Or Circuit Identification

The text now reads "Every circuit and circuit modification shall be legibly identified as to its clear, evident, and specific purpose or use. **The identification shall include sufficient detail to allow each circuit to be distinguished from all others.** The identification shall be included in a circuit directory that is located on the face or inside of the panel door in the case of a panelboard, and located at each switch on a switchboard."

We expect this identification to indicate the specific equipment, or location(s) of the areas, spaces, or rooms served by the circuits. (*Lights 1, Lights 2, Lights 3...or Receptacles A, Receptacles B, Receptacles C...* is not acceptable identification.) The installer must accurately complete a circuit directory at the time of the initial installation or rough-in inspection.

● Electrical Question of the Month

This Month's Question: Service entrance conductors must extend at least _____ from a service weather head. **A)** 12 inches, **B)** 18 inches, **C)** 24 inches, **D)** 36 inches.

Last Month's Question: When installed on the outside of a raceway or enclosure, the length of the equipment bonding jumper shall not exceed ____ feet and shall be routed with the raceway or enclosure. **A)** 4, **B)** 5, **C)** 6, **D)** 8. The answer is C) [NEC 250.102 (E)]